

DECLASS REVIEW by NGA

14 April 1965
552A - CD-106
AKC:rf

DETERMINATION OF SETTING OF JOYSTICK ANGLE (θ_j)
552A VIEWERS

IMAGE ROTATION ONLY

The operator looks into the eyepiece and orients the fiber cable image at the eyepiece (θ); until the image is erect.

The corresponding joystick should then be oriented in the following manner:

A) Set $\theta_j = 360 \text{ degrees} - \theta$; (for image of the film to move opposite to the joystick). Here, the turret moves in correspondence with joystick. Or,

B) Set $\theta_j = 180 \text{ degrees} - \theta$; (for θ , less than 180 degrees)
= 540 degrees $- \theta$; (for θ , more than 180 degrees)

IMAGE ROTATION + INVERSION

This is achieved by inverting the image optically in addition to actuating the inversion switch at the control panel. Rotate θ , (at eyepiece) so that the image is erect.

A) To set θ_j : make it equal to θ ; (for image of the film to move opposite to joystick).

B) Or, set $\theta_j = \theta, \pm 180 \text{ degrees}$ (for the image of the film to move in correspondence with joystick).

NOTE: During the above operations, adjust the right objective to the left turret.

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MOTOR SET AT HIGH SPEED

		<u>Speed Range</u>	<u>Microns Per Step</u>	<u>Inches Per Step</u>
Gear Train	H	0.04 in/Sec to 0.73 in/Sec.	50	.002
	M	0.0055 in/Sec to 0.10 in/Sec.	7	.00028
	L	0.00083 in/Sec to 0.015 in/Sec.	1	.00004

The pulse rates are approximately 20-360 pulses per second.

Slow Motor:

		<u>Speed Range</u>	<u>Microns Per Step</u>	<u>Inches Per Step</u>
	H	.002 in/Sec to .045 in/Sec.	50	.002
	M	.00028 in/Sec to .006 in/Sec.	7	.0028
	L	.00004 in/Sec to .00092 in/Sec.	1	.0004

The following data is for low stepping rates
(mainly measurement). Where pulse rates are from
1 pps to 22 pps approximately.

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Reference: Kodak B-3 pp 10

Present Lamp in use - approximate color temperature = 3300 degrees K
at 21.5 volts

To convert this illumination (directly from lamp) to a color temperature of 3400 degrees K, a (-10 mired shift) filter is required. Transmission = 81% (for Wratten 82 filter).

When the voltage is dropped so that only 50% of the light is realized, then the color temperature drops to 3020 degrees K. The filter recommended is -32 Mired shift, having a transmission of 63.3% (for Wratten 82B filter). This filter converts the 3020 degrees K to 3400 degrees K.

When voltage is dropped for 70% of the light, then the recommended filter to use is Wratten 82A (-18 Mired shift) resulting in a transmission of 7.5%.

NOTE: These filters do not compensate for the color of the cable (-Blue).